

LAND MEASUREMENTS PORTAL TRENDS

MONITORING GLOBAL FOREST COVER WITH A SPECIAL

The Kioto+ Satellite Mission

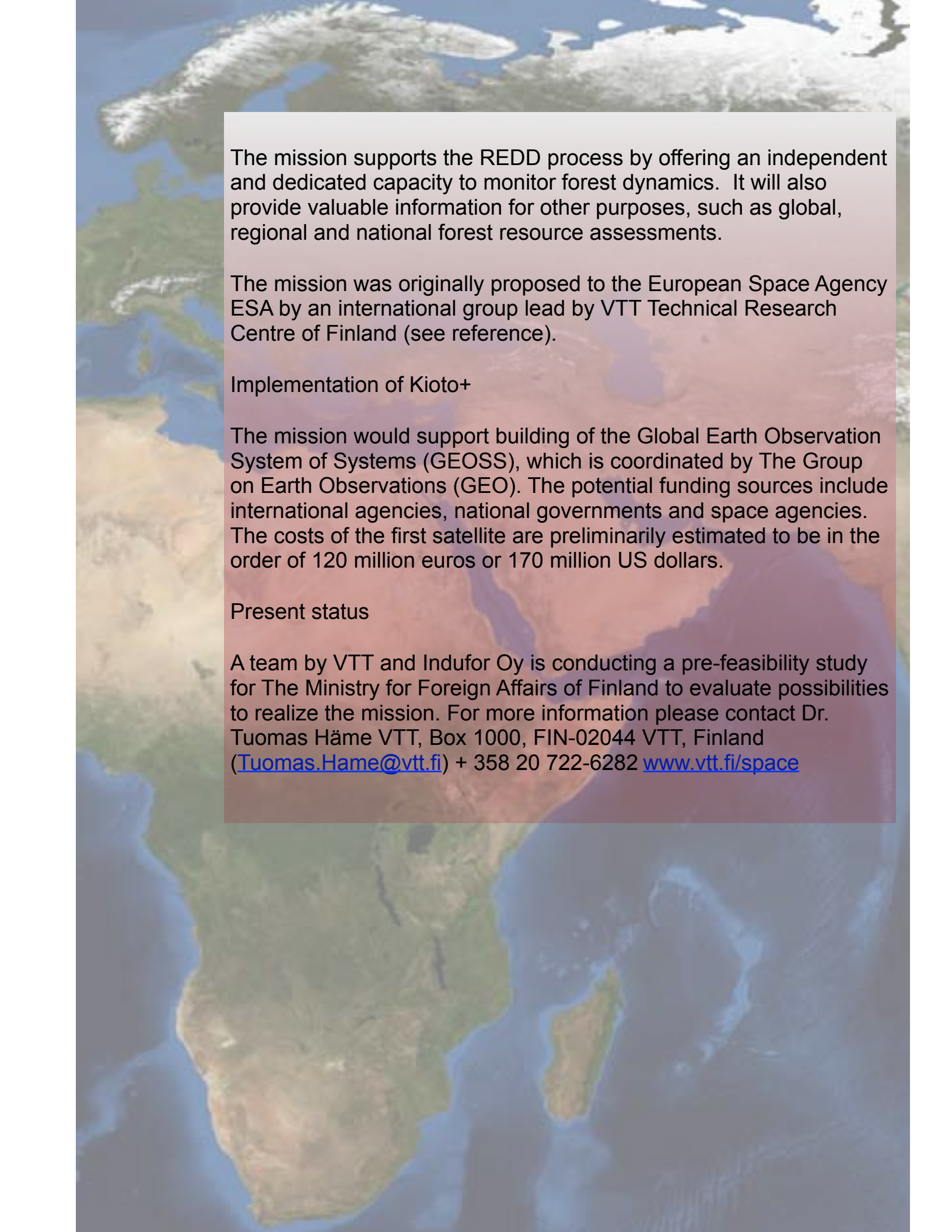
Pre-Feasibility Study

What is Kioto+

Kioto+ is a proposed satellite mission for the monitoring of global forest and land cover. It will acquire digital images with 0.5 meter ground resolution using a statistical sampling principle. The distance of the images is foreseen to be 15 km by 15 km but also a stratified sampling approach with variable sampling density is possible. The image size is 4 km by 4 km. The sample is high enough to enable computation of reliable statistical data about forest and other major land cover classes over areas of 100 000 km². The first satellite would initiate a continuous monitoring system through several successive satellites.

Rationale of Kioto+

The image accuracy is high enough to monitor deforestation, including forest degradation. Individual trees can be observed from the images. The current and planned satellite missions either collect "wall-to-wall" images with lower resolution, or are based on image orders by customers, which means image acquisition mainly from built-up regions. The Kioto+ mission will provide accurate statistical data on forest and land cover, comparable to field measurements rather than existing or planned satellite observation systems.



The mission supports the REDD process by offering an independent and dedicated capacity to monitor forest dynamics. It will also provide valuable information for other purposes, such as global, regional and national forest resource assessments.

The mission was originally proposed to the European Space Agency ESA by an international group lead by VTT Technical Research Centre of Finland (see reference).

Implementation of Kioto+

The mission would support building of the Global Earth Observation System of Systems (GEOSS), which is coordinated by The Group on Earth Observations (GEO). The potential funding sources include international agencies, national governments and space agencies. The costs of the first satellite are preliminarily estimated to be in the order of 120 million euros or 170 million US dollars.

Present status

A team by VTT and Indufor Oy is conducting a pre-feasibility study for The Ministry for Foreign Affairs of Finland to evaluate possibilities to realize the mission. For more information please contact Dr. Tuomas Häme VTT, Box 1000, FIN-02044 VTT, Finland (Tuomas.Hame@vtt.fi) + 358 20 722-6282 www.vtt.fi/space